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Feucht et al.

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[54] **ORGANIZER CABINET**

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[73] Assignee: **Liberty Diversified Industries, Inc.**, Minneapolis, Minn.

[21] Appl. No.: **504,572**

[22] Filed: **Apr. 4, 1990**

[51] **Int. Cl.**[5] **A47B 47/00**

[52] **U.S. Cl.** **312/263**; 312/108

[58] **Field of Search** 312/257.1, 258, 259, 312/263, 108

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Assembly Instructions for Model 8241 of the SAFCO E-Z STOR, Undated.

Primary Examiner—Joseph Falk

Attorney, Agent, or Firm—Merchant, Gould, Smith, Edell, Welter & Schmidt

[57] **ABSTRACT**

A cabinet is disclosed which includes a frame defining a cabinet interior. A plurality of dividers separate the cabinet interior into a plurality of storage compartments. The frame includes opposing side walls and top and bottom walls. The top wall is attached to the side walls by first and second mounting plates carried on the side walls and top wall, respectively. The first plate is resiliently urged against the side wall. The second plate is sized to be received between the first plate and the side wall, with latch mechanisms for holding the attaching plates in position.

7 Claims, 6 Drawing Sheets

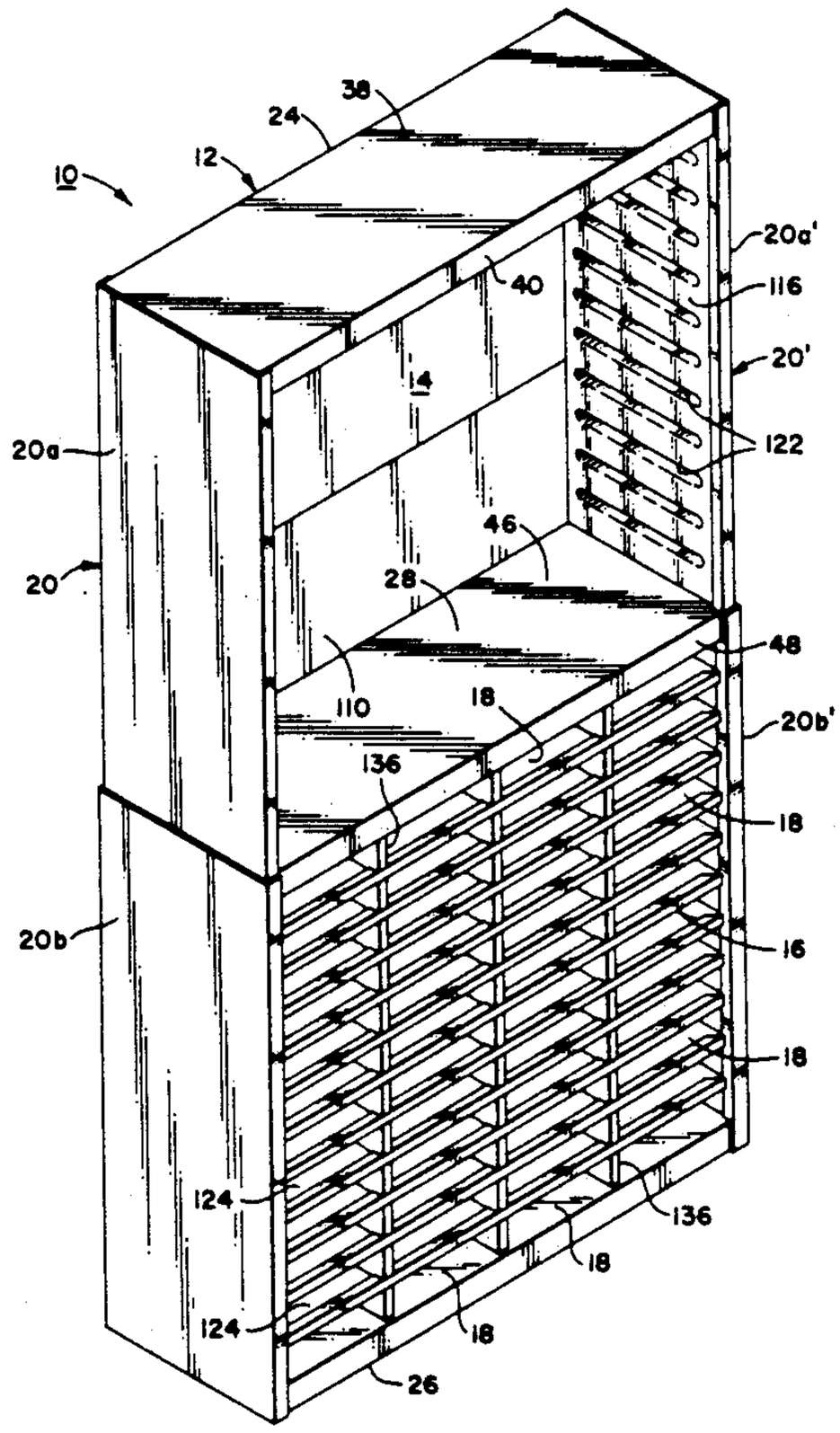
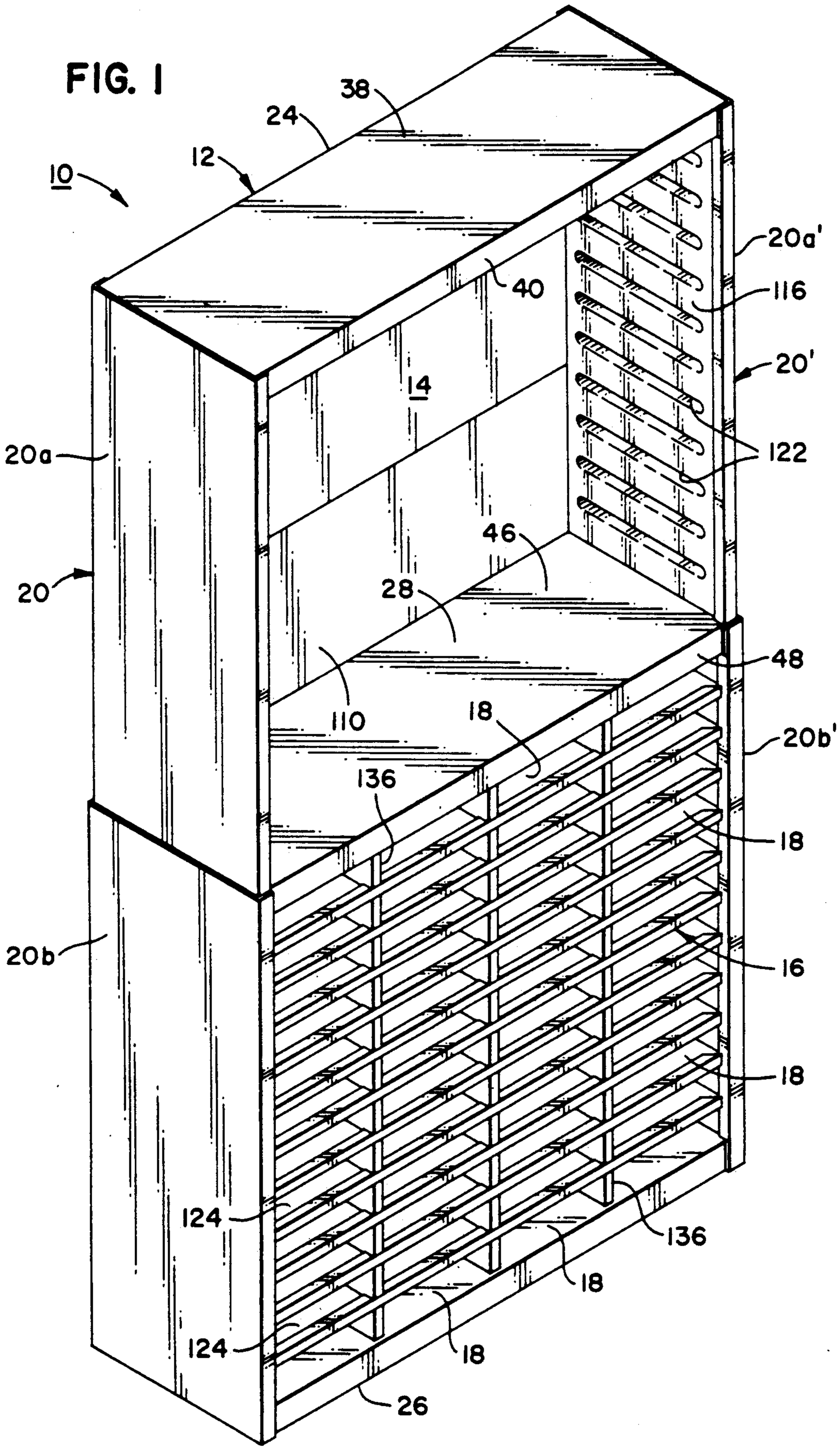


FIG. 1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24
12
10
40
20a'
116
20'
14
122
20a
46
20
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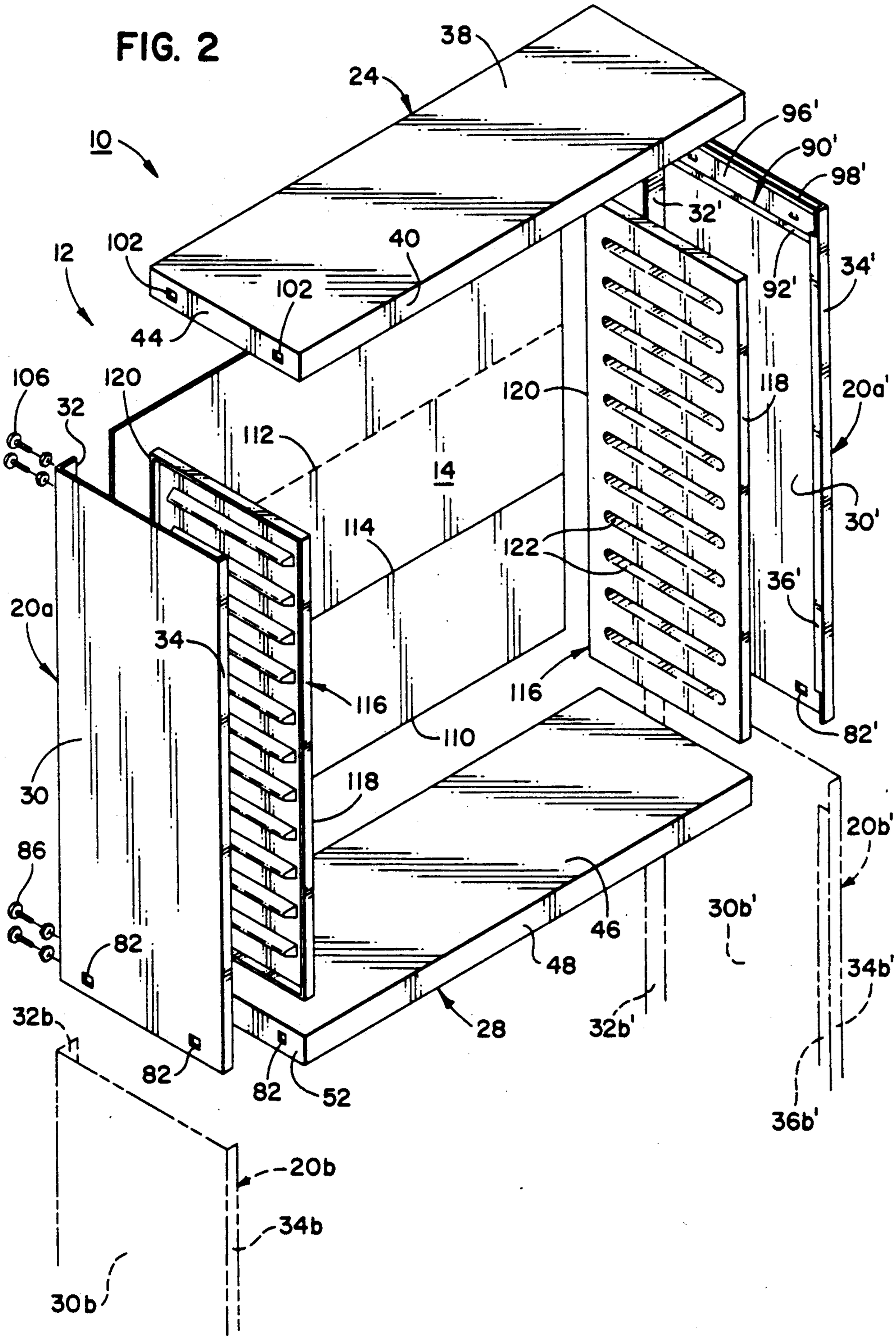
110
18
20b'
136
18
16
20b
18
124
136
18
124
18
26

FIG. 2


10
12
14
20a
20b
20a'
20b'
24
28
30
30'
30b
30b'
32
32'
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34
34'
34b
34b'
36'
36b'
38
40
44
46
48
52
82
82'
86
90'
92'
96'
98'
102
102
106
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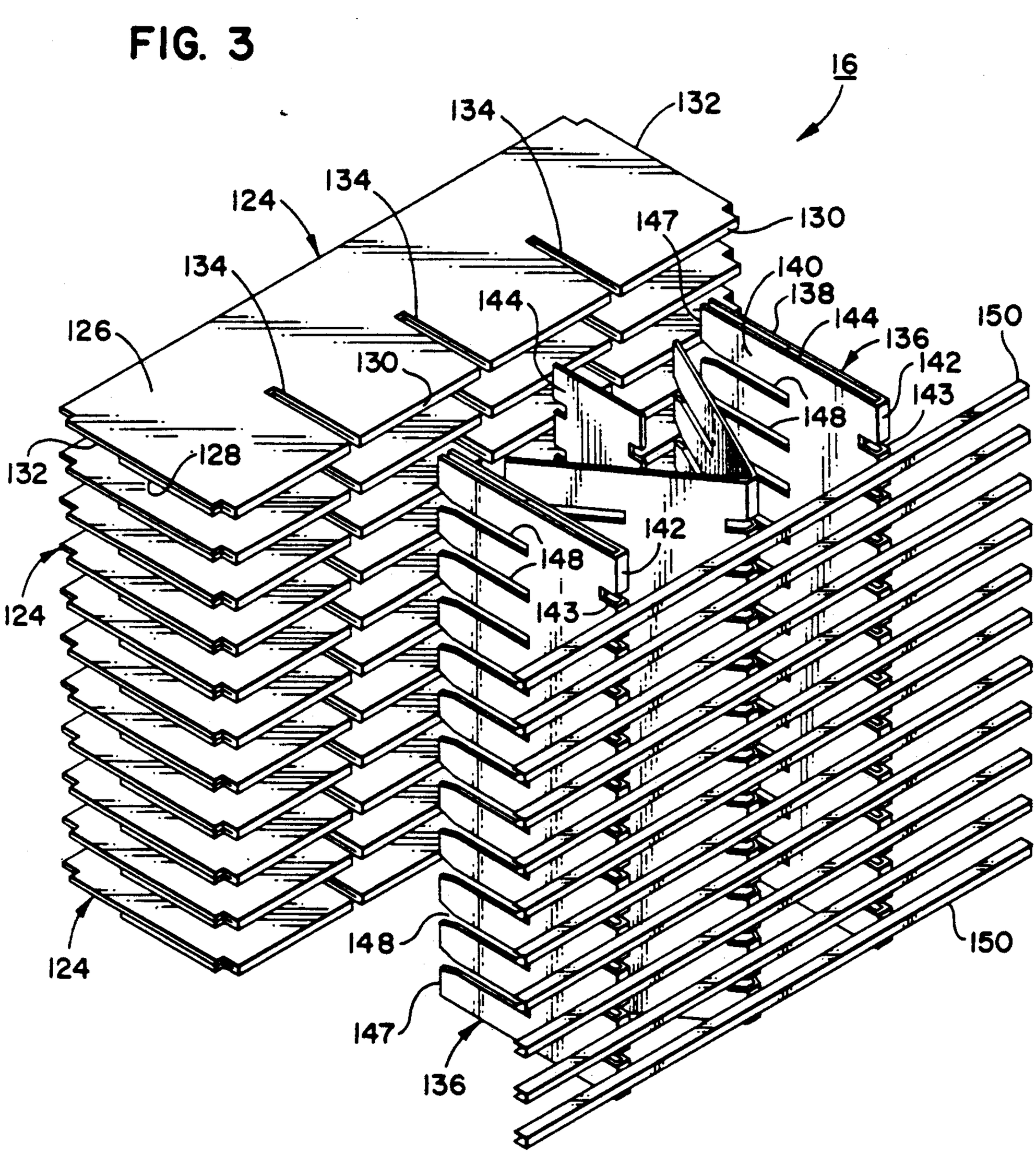
112
114
116
116
118
118
120
120
122

FIG. 3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138
144
144
126
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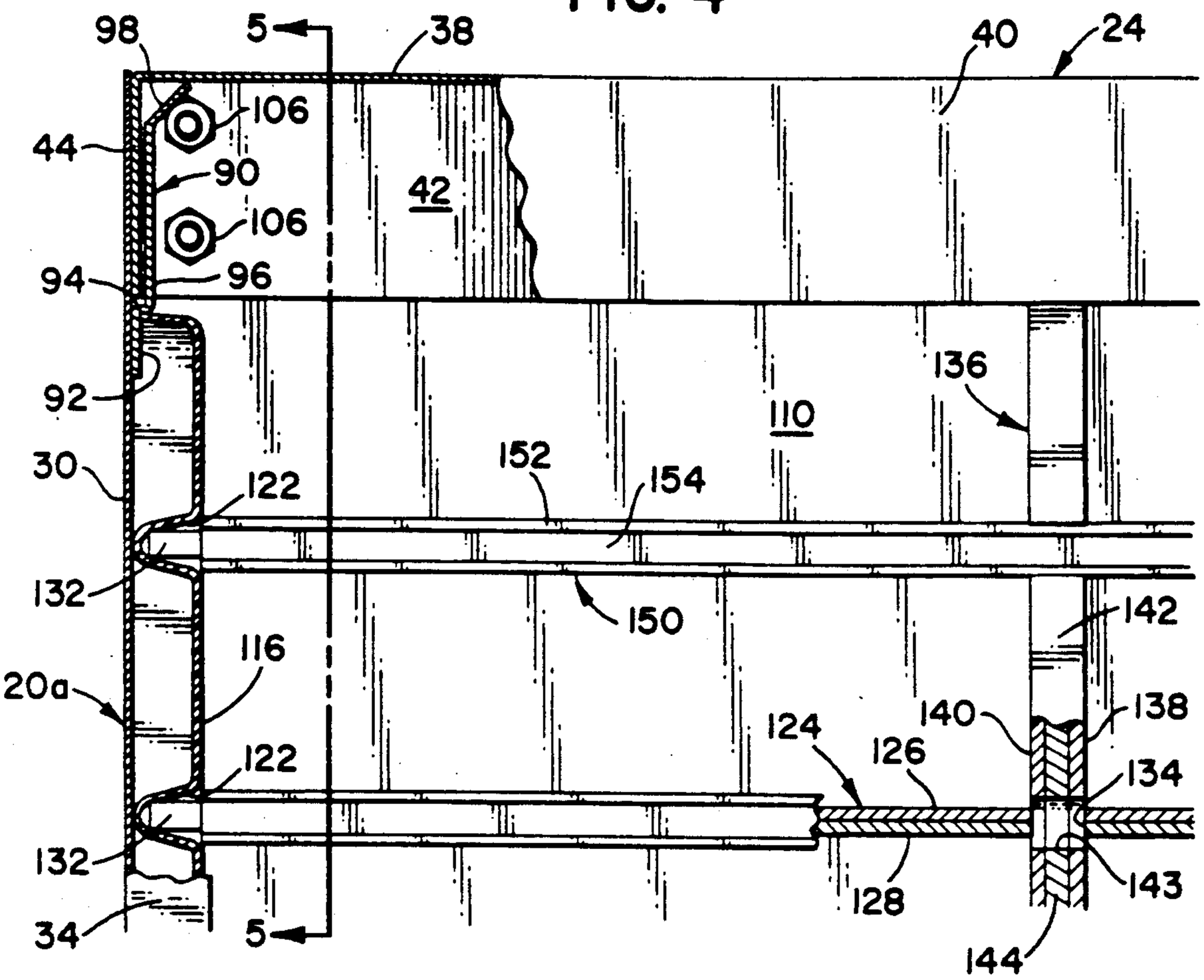
132
142
148
143
124
124
148
150
147
136

FIG. 4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5
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94
96
92
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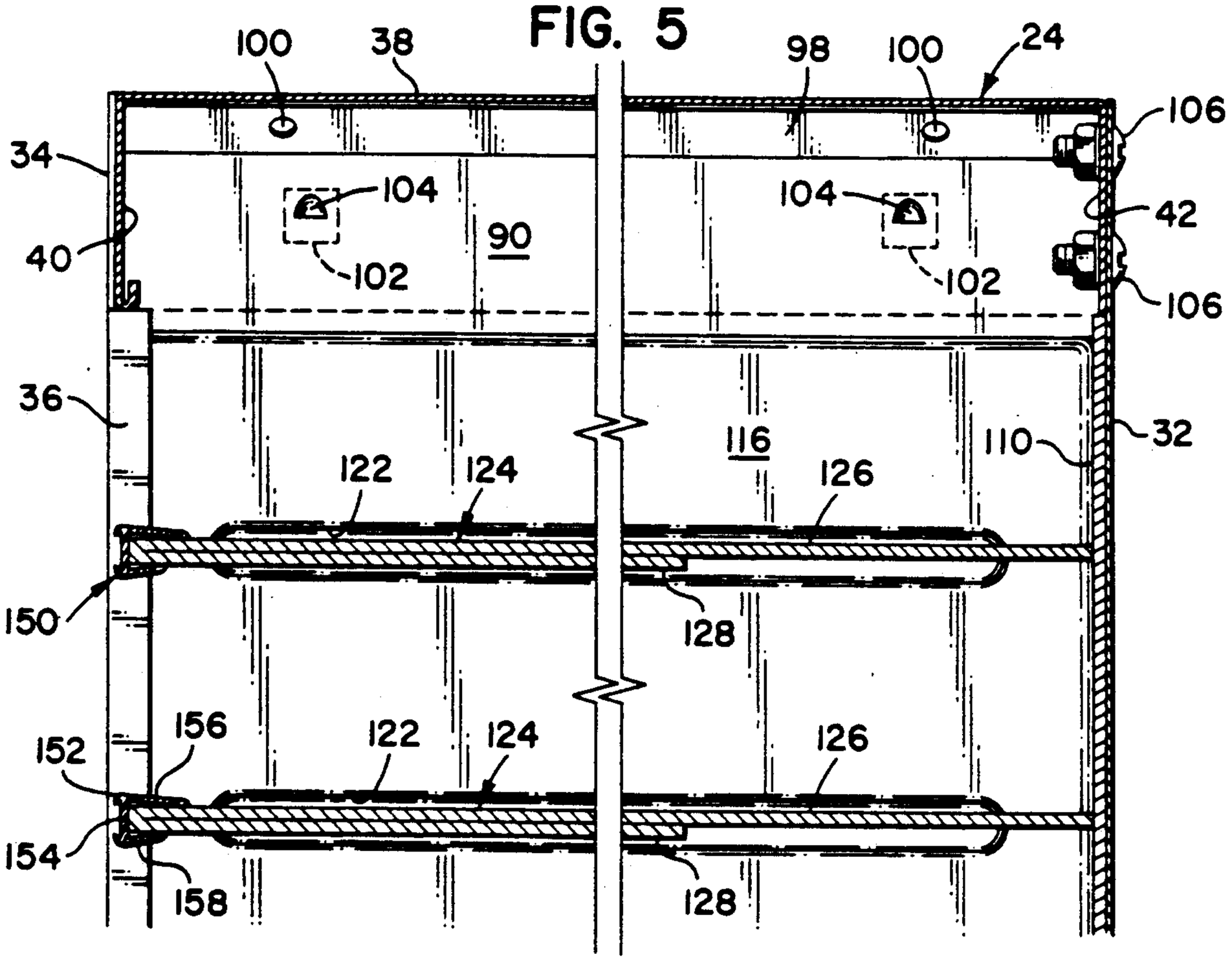
30
152
154
122
132
150
142
116
20a
140
138
124
126
122
134
132
143
128
34
5
144

FIG. 5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106
34
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42
40
90
102
102
106
36
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122
124
126
150
128
156
152
122
124
126
154
158
128

FIG. 6

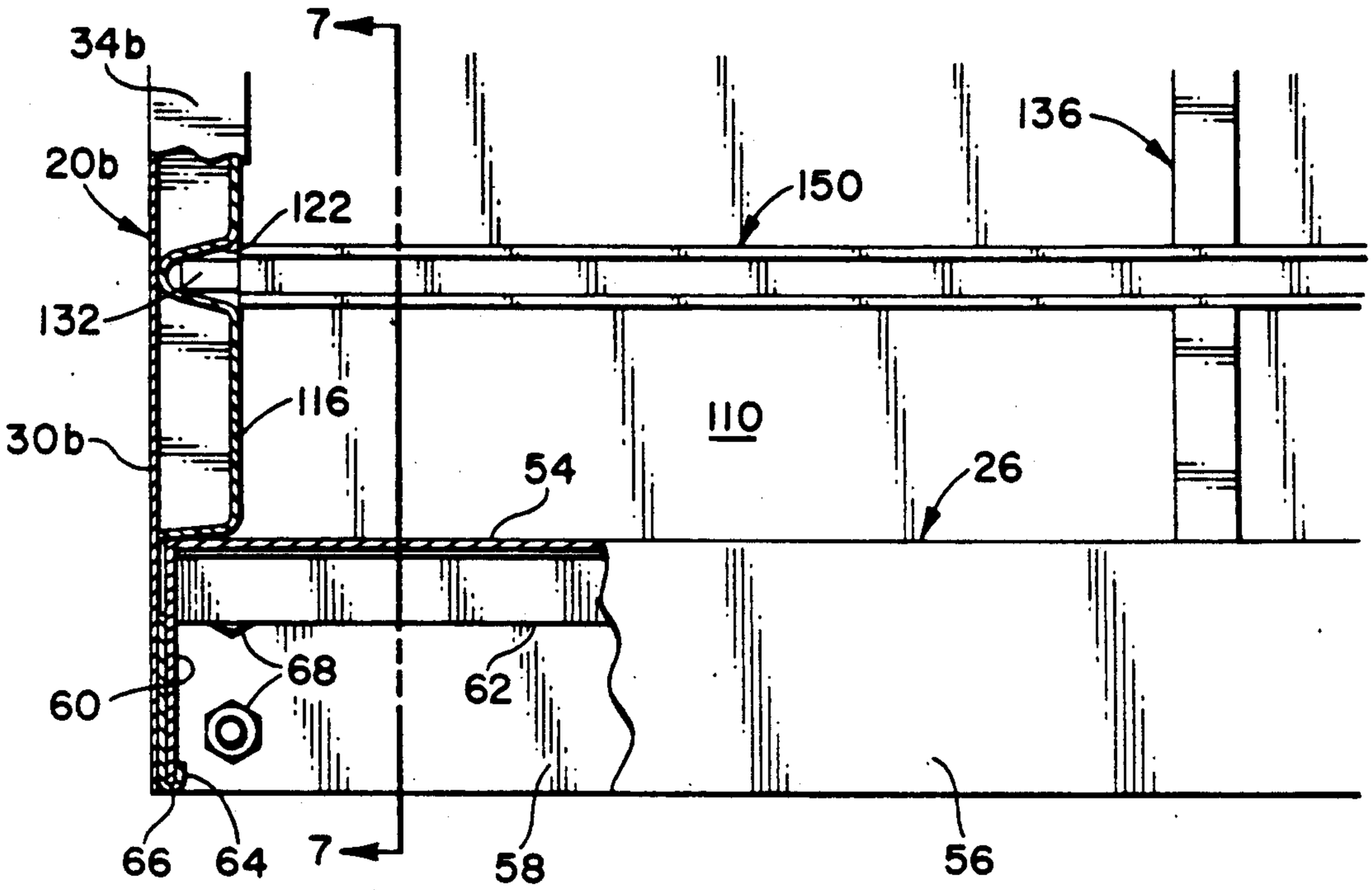

34b
7
136
20b
150
122
132
116
110
30b
54
26
68
62
60
66
64
7
58
56

FIG. 7

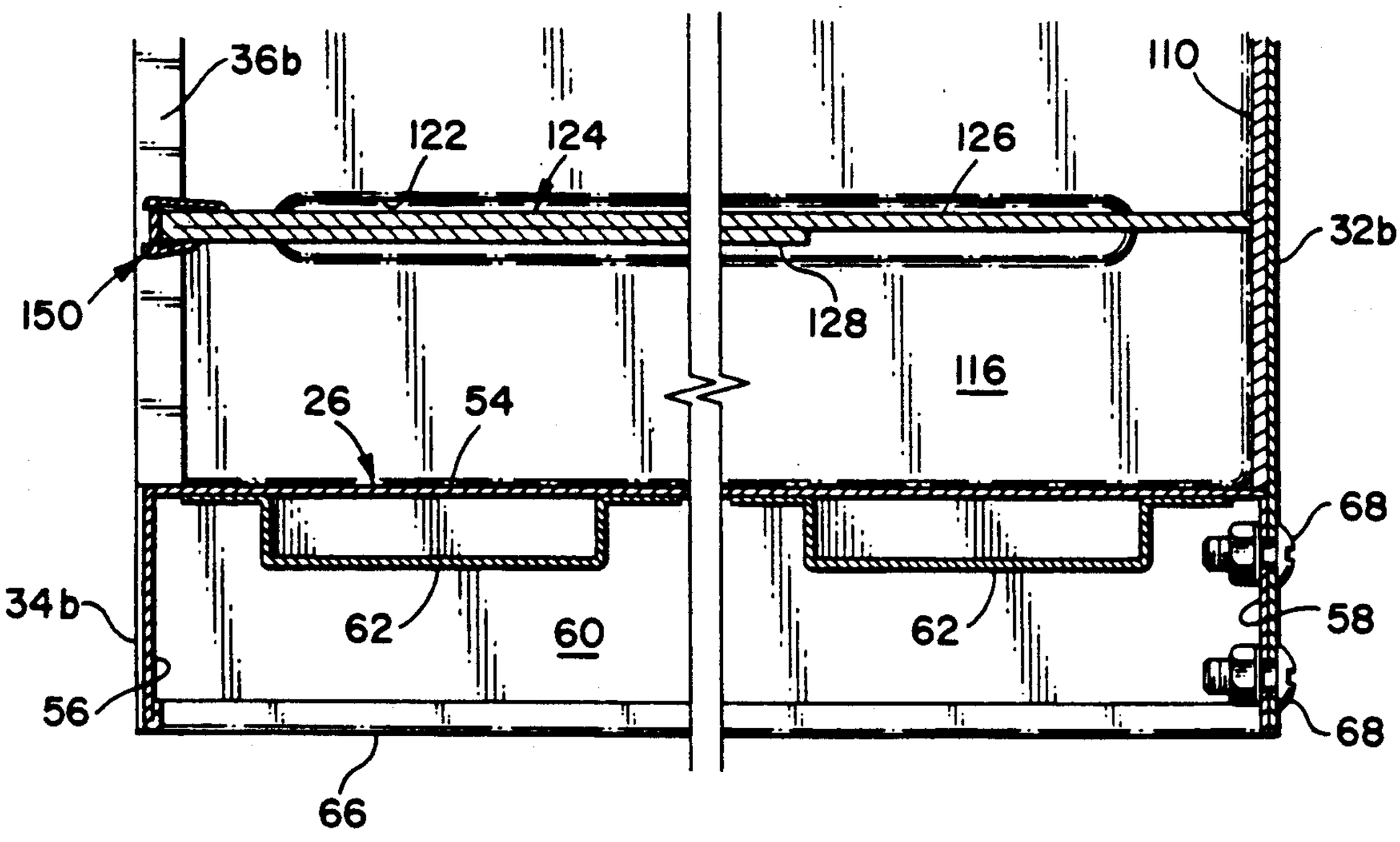

36b
122
124
126
110
150
32b
128
116
26
54
68
62
60
34b
58
56
66
62
68

FIG. 8

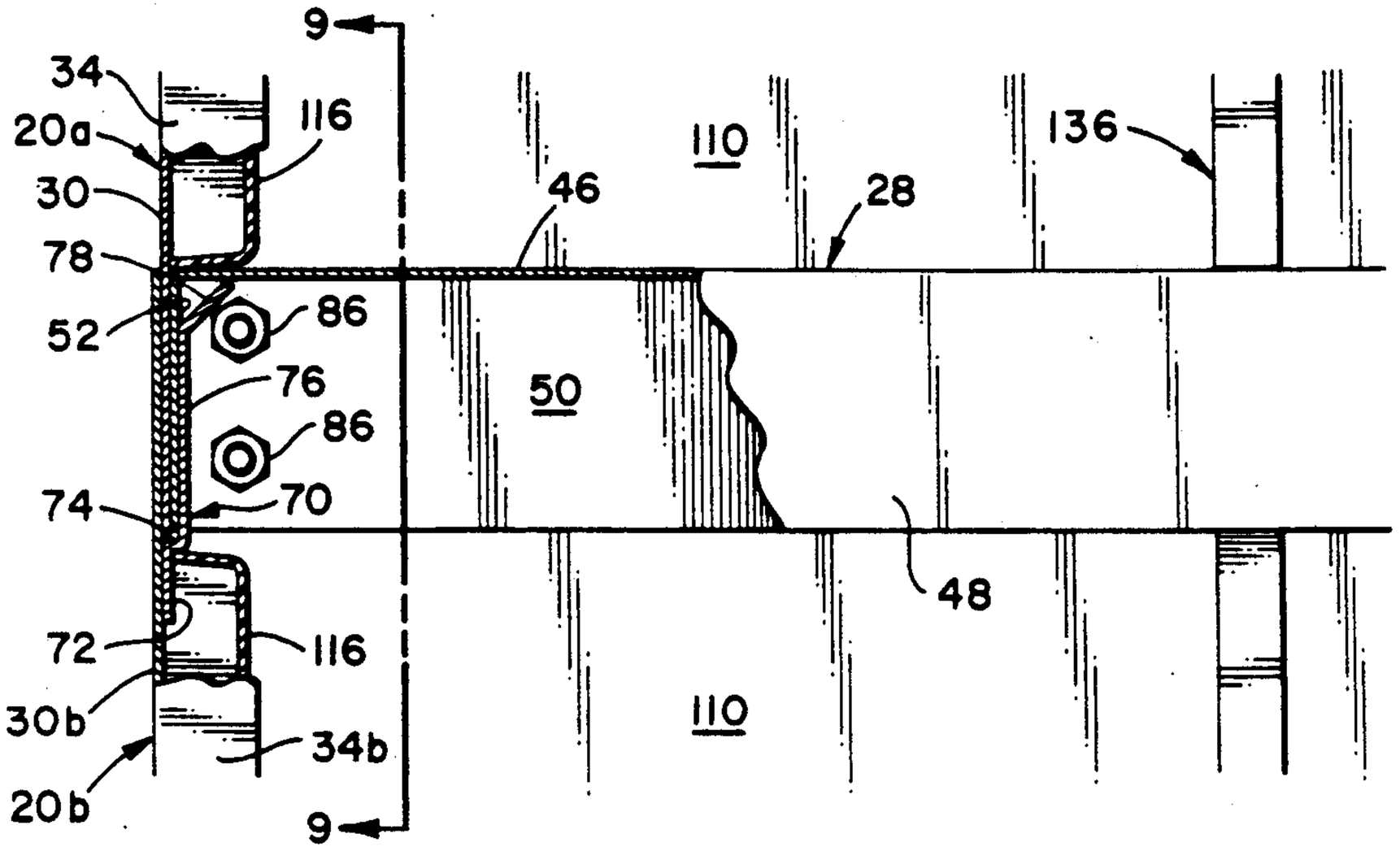
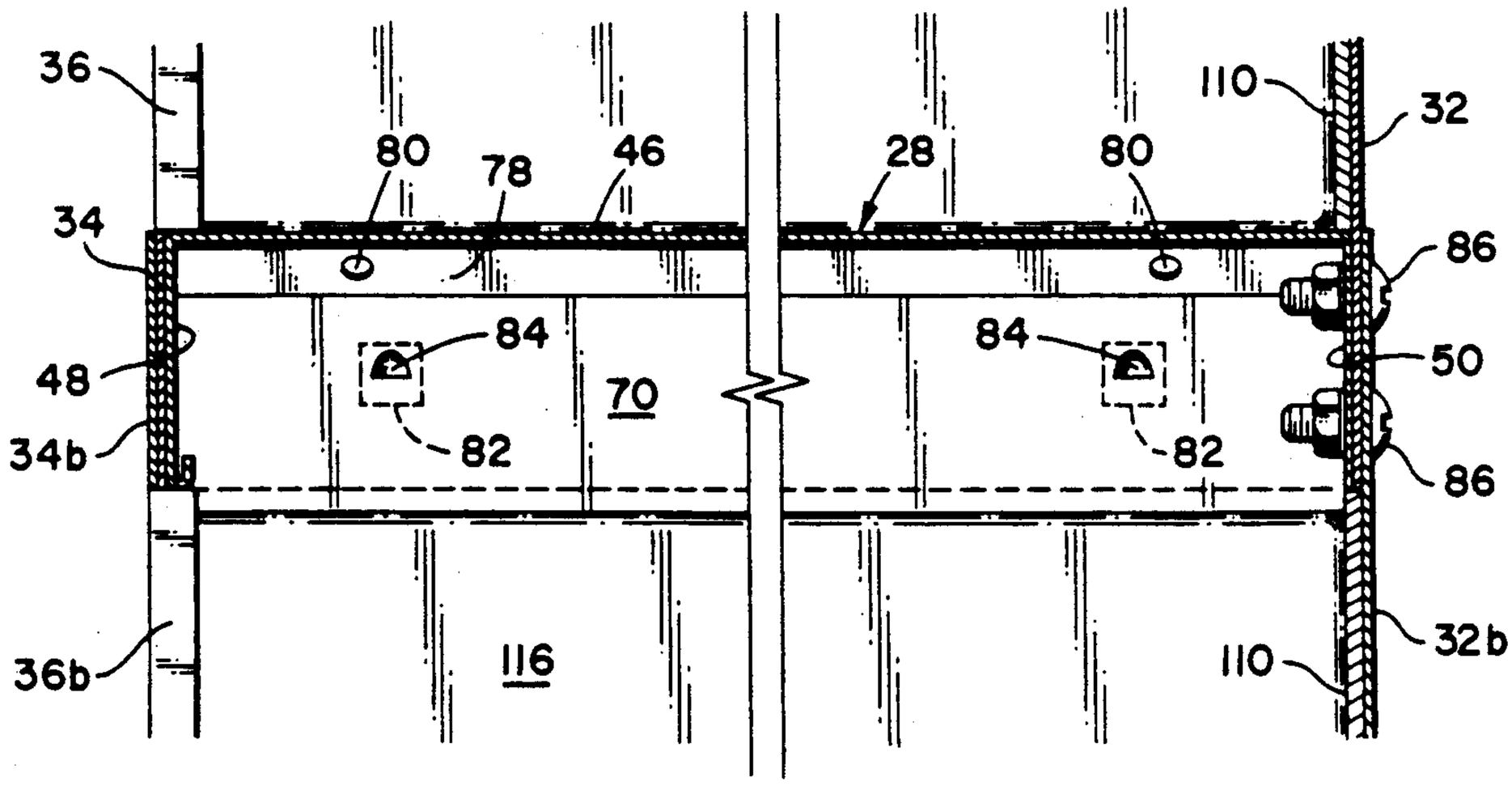

9
34
116
20a
110
136
30
46
28
78
86
52
76
50
86
74
70
48
72
116
30b
110
34b
20b
9

FIG. 9


36
80
78
46
28
80
110
32
34
86
84
84
48
50
70
82
82
34b
86
36b
116
110
32b

ORGANIZER CABINET

I. BACKGROUND OF THE INVENTION

1. Field of the Invention

This application pertains to an organizer cabinet. More particularly, this invention pertains to such a cabinet having a frame of novel construction for defining a cabinet interior which receives a plurality of dividers.

2. Description of the Prior Art

Organizer cabinets are well known in the art. Representative examples of such are shown in the brochure of Safco Products Company, New Hope, Minn., entitled "EZ Stor ® Organizers for Literature, Printout and Mail Distribution Product Specifications". The organizer cabinet shown in the brochure includes a metal, rectangular frame which define a cabinet interior. A plurality of divider elements are placed within the interior to divide the cabinet interior into a plurality of storage compartments. The manner of construction of the various elements and their assembly is best understood with respect to the assembly instructions for Model 8241 of the Safco ® EZ Stor ®.

As shown in the aforesaid publications, the frame is constructed by piecing together side walls, top walls, bottom walls, and an intermediate shelf. The walls are joined by a plurality of hardware items such as nuts and bolts.

While the foregoing design of organizer cabinets is effective, improvements in the design are desirable. For example, it is desirable to provide an organizer cabinet which can be assembled quickly by unskilled personnel. It is also desirable to provide an organizer cabinet which, when assembled, has exposed surfaces which are free of unsightly connecting hardware.

It is an object of the present invention to provide an organizer cabinet which is easy to assemble. It is a further object of the present invention to provide such a cabinet which can be manufactured at low cost. A still further object of the present invention is to provide an organizer cabinet which is free of unsightly connecting hardware on exposed surfaces.

II. SUMMARY OF THE INVENTION

According to a preferred embodiment of the present invention, an organizer cabinet is disclosed having a frame defining a cabinet interior with dividers carried in the frame for dividing the interior into a plurality of storage compartments. The frame includes a plurality of walls such as opposing side walls and opposing top and bottom walls. The top wall is attached to the side walls by first and second mounting plates carried on the side and top walls, respectively. The first mounting plate is resiliently urged against the side wall and the second mounting plate is disposed to be slid between the side wall and the first mounting plate. A latch mechanism is provided for latching the second mounting plate between the first side wall and the second mounting plate.

III. BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top, left side and front perspective view of an organizer cabinet according to the present invention showing dividers in the bottom half of the cabinet;

FIG. **2** is a top front and left side exploded perspective view showing the top half of the cabinet of FIG. **1**;

FIG. **3** is a top, front and left side exploded view of divider elements of the cabinet of FIG. **1**;

FIG. **4** is a front elevation view, taken partially in section, showing means for attaching side walls of the cabinet frame to a top wall;

FIG. **5** is a view taken along line **5—5** of FIG. **4**;

FIG. **6** is a front elevation view, taken partially in section, showing attachment of the side walls to a bottom wall of the cabinet of FIG. **1**;

FIG. **7** is a view taken along line **7—7** of FIG. **6**;

FIG. **8** is a front elevation view, taken partially in section, showing attachments between upper and lower side wall halves at an intermediate shelf; and

FIG. **9** is a view taken along line **9—9** of FIG. **8**.

IV. DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the several drawing figures in which identical elements are numbered identically throughout, a description of the preferred embodiment will now be provided.

An organizer cabinet **10** is shown comprising a frame **12** which defines the cabinet interior **14**. A divider system **16** is received within interior **14** and subdivides interior **14** into a plurality of storage compartments **18**.

The frame **12** is preferably constructed of sheet metal steel, and includes side walls **20**, **20'** top wall **24** and bottom wall or base **26**. Side walls **20**, **20'** are mirror images of one another, and a description of side wall **20** will suffice as a description of side wall **20'**.

Each of side walls **20**, **20'** includes upper and lower side wall half portions **20***a*, **20***b*, **20***a'* and **20***b'* (see FIGS. **1** and **2**). Extending between side walls **20** and **20'** at the point of juncture of halves **20***a*, **20***b*, **20***a'* and **20***b'* is an intermediate divider shelf **28**.

Shown best in FIGS. **2**, **4** and **5**, side wall **20***a* includes a flat main panel **30** having a rear edge flange **32** and forward edge flange **34**. Shown best in FIGS. **2** and **4**, forward edge flange **34** has an inwardly protruding lip **36**. Each of portions **20***b*, **20***a'*, **20***b'* also include panels and flanges such as portion **20***a*. Accordingly, the same numbering for these elements is used in panels **20***b*, **20***a'* and **20***b'*. For reasons that will become apparent, bottom panels **20***b* and **20***b'* are sized to be slightly greater than panels **20***a* and **20***a'* such that panels **20***a* and **20***a'* may be slidably received within panels **20***b* and **20***b'*, respectively.

Top wall **24** includes a flat top panel **38**, a forward edge flange **40**, a back edge flange **42** and side edge flanges **44**. Similarly, intermediate shelf **28** includes a top panel **46** having a forward edge flange **48**, a rear edge flange **50** and side edge flanges **52**.

Bottom wall or base **26** includes a top plate **54**, front edge flange **56**, rear edge flange **58** and side edge flanges **60**. Disposed on an underside of top plate **54** are a pair of rectangular cross-section reinforcement channels **62** which are welded to the bottom surface of plate **54**. Channels **62** provide reinforcement to base **26** to prevent bending and torquing of the frame **12**.

The frame **12** is assembled by the bottom side wall halves **20***b*, **20***b'* first being connected to base **26**. With best reference to FIG. **6**, side wall **20***b* is shown attached to base **26**. An attachment plate **64** is provided against the inside lower edge of wall **20***b* and secured thereto by spot welding or any suitable means. A lower edge of attachment plate **64** is provided with an upwardly turned end **66** to provide a U-shaped channel sized to receive a free edge of side flange **60**. Bolt and

nut attachment means **68** are provided passing through rear edge flange **32***b* of panel **20***b* and through aligned holes in back edge flange **58** of base **26**.

With the construction as described, base **26** is attached to the side wall **20***b* in two manners. The first is the receipt of side edge flange **60** within U-shaped channel **66** and the second is the bolt attachment of flange **58** to rear edge flange **32***b*. Right lower side wall segment **20***b'* is attached to base **26** in a manner identical to the attachment of segment **20***b*.

After panels **20***b* and **20***b'* have been attached to base **26**, intermediate shelf **28** is attached to the top edges of panels **20***b* and **20***b'*. With best reference to FIGS. **8** and **9**, the reader will note that the top edges of side wall portions **20***b*, **20***b'* are provided with a first mounting plate in the form of a snap plate **70**. The plate **70** runs the entire width of panels **20***b*, **20***b'* (i.e., the distance between forward edge flange **48** and rear edge flange **50**). Plate **70** includes a lower attachment end **72** which is welded approximately to the interior surface of plate **30***b*. A spacer flange **74** spaces a fastening plate **76** of snap plate **70** in space relation to plate **30***b*. Snap plate **70** is formed of plate steel which is resilient, with plate **76** being resiliently biased toward plate **30***b*. An upper edge **78** of plate **76** is bent outwardly away from plate **30***b* and is provided with holes **80** for receiving a screwdriver or other similar suitable tool so that an operator may engage end **78** and force plate **76** against its natural urging away from plate **30***b*.

Plate **70** is sized to receive side edge flange **52** of intermediate shelf **28** and a lower edge of plate **30** of upper side half portion **20***a*. The flange **52** acts as a cooperating second mounting plate to join with snap plate **70**. Both of side half portion **20***a* and side edge flange **52** are provided with rectangular-shaped openings **82** (see FIG. **2**) which are disposed to be in alignment when the side half **20***a* and side edge flange **52** are received between plate **76** and plate **30***b* as shown in FIG. **8**.

Plate **76** is provided with tabs **84** which protrude toward plate **30***b*. Tabs **84** are disposed on plate **76** to be aligned with holes **82** when shelf **28** and upper side half **20***a* are installed, as best shown in FIG. **9**. The tabs **84** are captured within the holes **82** to prevent the shelf **28** and upper side half **20***a* from being removed from lower half **20***b* unless an operator forces plate **76** away from plate **30***b* by inserting a tool within holes **80** as previously indicated.

In addition to the above, bolt and nut fastening means **86** are provided passing through aligned holes in rear flanges **32**, **32***b* of upper and lower side halves **20***a*, **20***b*, and rear edge flange **50** of intermediate shelf **28**. Accordingly, the tabs **84** and bolt and nut combinations **86** provide a dual mechanism for connecting intermediate shelf **28** with side halves **20***a*, **20***b*. Shelf **28** is attached to side halves **20***a'* and **20***b'* in an identical manner.

Top wall **24** is next attached to the top edges of upper side halves **20***a*, **20***a'*, in a manner similar to the connection of shelf **28** to side halves **20***b*, **20***b'*. To illustrate this connection, reference is best directed to FIGS. **4** and **5**. As shown in FIGS. **4** and **5**, a snap plate **90** is provided with an attachment end **92** welded to an inner surface of upper plate **20***a*. A step flange **94** spaces a fastening plate **96** from plate **30**. The plate **96** is resiliently biased toward plate **30**. An upper edge **98** of plate **96** is bent outwardly away from plate **30** and is provided with holes **100** in which an operator may insert a screwdriver or similar tool for urging plate **96** against its bias away from plate **30**.

Plate **96** is sized to receive side edge flange **44** of top wall **24** between plate **96** and plate **30**. Flange **44** is provided with holes **102** (see FIG. **2**) which are disposed to be aligned with tabs **104** protruding from plate **90** when flange **44** is received between plate **96** and plate **30** as shown in FIGS. **4** and **5**. Bolt and nut fastening means **106** are provided passing through aligned holes of rear edge flange **32** and flange **42** (see FIG. **5**). Top shelf **24** is connected to upper side wall half **20***a'* in a manner identical to that described above.

With the construction as described, frame members **20***a*, **20***b*, **20***a'*, **20***b'*, **24**, **28** and **26** are joined to form a rigid frame. With the fastening mechanisms as described, the frame may be easily assembled by low-skilled personnel. Also, with the construction as described, no fastening hardware is exposed through the front of the frame or on exposed side walls. Instead, all hardware (such as the heads of bolts **68**, **86**, and **106**) are only exposed through the rear of the frame, which, in practice, is commonly abutting a wall and out of view to the public. As a result of this fastening structure, only clean, unobstructed lines of the frame are exposed. The reader will note from inspecting FIGS. **1**, **2** and **4–9** that all fastening elements (such as plates **64**, **70** and **90**) are fully enclosed within the frame and out of view to a person inspecting the exterior of the frame.

With the frame thus constructed, two interior portions **14** are defined by the frame. The interior portions are separated by intermediate shelf **28**. Each of interior portions, in a preferred embodiment, receives an identical divider system **16** for dividing the interior **14** into a plurality of compartments **18**. To illustrate this construction, attention is directed to FIG. **2**.

As noted in FIG. **2**, a flat rectangular back wall **110** is provided which, in a preferred embodiment, is formed of cardboard folded along two fold lines **112**, **114** so that the cardboard back wall **110** can be folded in thirds to facilitate shipment of the disassembled product.

The opened back wall **110** (as shown in FIG. **2**) is inserted within the frame interior abutting rear edges **32**. To hold the back wall **110** in place, interior side moldings **116** are provided. Both left and right side moldings **116** are provided for insertion within side walls **20***a*, **20***a'*, **20***b* and **20***b'*.

Each of moldings **116** is identical. Side wall molding **116** is preferably vacuum molded plastic and is a flat panel sized to have its forward edge **118** (see FIG. **2**) received behind forward flange **36**, with the panel extending from forward edge **118** to a rear edge **120**. With this construction, the panel **116** is snugly received within side wall portions **20***a*, **20***a'*, **20***b*, **20***b'* and act to hold rear back wall **110** in place. Side wall moldings **116** are symmetrically designed to assist in easy installation.

Side wall panels **116** are provided with preformed slots **122** which are horizontal and aligned with the slots on an opposing panel **116**. The slots **122** hold the horizontal shelves or dividers **124**.

Shown best in FIG. **3**, all of the horizontal dividers **124** are identical and are preferably formed from corrugated fiberboard and include a top half **126** and a bottom half **128** folded over to present a leading edge **130**, and extending between side edges **132**. The side edges **132** are received within slots **122** to hold each of horizontal dividers **124** in spaced apart generally parallel alignment. Each of horizontal dividers **124** has slots **134** formed through each of panel halves **126**, **128** at leading

edge **130** so that when the dividers **124** are received between slots **122**, the slots **134** are aligned to define spaced apart vertical slots extending the height of the cabinet interior.

Vertical dividers **136** are provided to be received within aligned slots **134**. Each of vertical dividers **136** is preferably formed of corrugated fiberboard, including a right half **138** and a left half **140** folded over in opposing relation and defining a leading edge **142**. For added rigidity, a corrugated fiberboard reinforcing plate **144** is received between halves **138** and **140** adjacent to leading edge **142**. A rear edge **147** of the vertical dividers **136** is provided with spaced apart slots **148** disposed to align with slots **134** of the spaced apart horizontal dividers **124**. With the construction thus described, horizontal dividers **124** and vertical dividers **136** are interlocked to form a grid as shown in FIG. **1**.

Label holders **150**, preferably formed from extruded plastic, are provided to be attached to leading edges **130**. With reference to FIG. **5**, the label holders **150** have a forward surface **152** provided with a slot **154** to receive identification labels so that each of the compartments may be separately identified as to their content. Upper and lower retaining plates **156**, **158**, respectively, secure the label holder **150** on to leading edges **130**. The longer upper plate **156** provides for easy installation. Leading edge **142** of vertical dividers **136** has slots **143** (see FIG. **3**) to receive the label holders **150**.

With the construction thus described, the reader will appreciate that the entire cabinet may be disassembled into a plurality of small units so that the entire cabinet can be easily shipped. The novel construction technique permits an operator to assemble the frame with ease and with minimal instructions in a short period of time. The resulting cabinet so constructed is durable and resistant to bending and torquing. Also, the novel side plates **116** permit a collapsible back wall **110** to be utilized and retain the dividing members **124**, **136** in proper alignment to define individual compartments.

From the foregoing detailed description of the invention, it has been shown how the objects of the invention have been obtained in a preferred manner. However, modifications and equivalents of the disclosed concepts, such as those which readily occur to one skilled in the art, are intended to be included within the scope of this invention. Accordingly, the scope of the present invention is intended to be limited only by the scope of the claims which are appended hereto.

What is claimed is:

1. A cabinet comprising:
(a) a frame defining a cabinet interior;
(b) divider means for dividing said interior into a plurality of storage compartments;
(c) said frame including:
(1) a plurality of walls including a first set of opposing side walls joined by opposing top and bottom walls;
(2) bottom wall attaching means for attaching said bottom wall to said side walls of said first set;
(3) top wall attaching means for attaching said top wall to said side walls of said first set;
(d) said top wall attaching means including:
(1) a first mounting plate disposed upon at least one of said side walls of said first set and resiliently urged against said one side wall;
(2) a second mounting plate carried on said top wall and sized to be urged between said one side wall and said first mounting plate;
(3) latch means for latching said second mounting plate between said first mounting plate and said one side wall, said latching means including apertures formed in one of said first and second mounting plates and tabs disposed on another of said first and second mounting plates to be received within said apertures;
(e) a second set of opposing side walls including at least one of said second set having a free end sized to be inserted together with said second mounting plate between said one side wall of said first set and said first mounting plates.

2. A cabinet according to claim **1** wherein said bottom wall attaching means includes means for defining a channel on a lower edge of said side walls and sized to receive a lower edge of said bottom wall.

3. A cabinet according to claim **1** wherein said divider means includes side inserts sized to be disposed within said side walls, with said inserts disposed in opposing relation and defining means for holding a plurality of divider elements.

4. A cabinet according to claim **3** comprising a back wall formed of a plurality of collapsible elements, with said back wall disposed between said side wall inserts, and said side wall inserts opposing elements of said side walls maintaining said back wall in an uncollapsed position.

5. A cabinet comprising:
(a) a frame defining a cabinet interior;
(b) divider means for dividing said interior into a plurality of storage compartments;
(c) said frame including:
(1) a plurality of walls including opposing side walls joined by opposing top and bottom walls;
(2) bottom wall attaching means for attaching said bottom wall to said side walls;
(3) top wall attaching means for attaching said top wall to said side walls;
(d) said bottom wall attaching means including:
(1) a flange disposed on said bottom wall and extending to a downwardly projecting free lower edge;
(2) a mounting plate disposed on an interior surface of said side wall against a lower edge thereof and including means for defining an upwardly opening channel sized to receive said lower edge of said flange, said channel and said lower edge sized and positioned for said side wall to extend to close proximity to a floor when said bottom wall is attached to said side walls and when said cabinet is placed on said floor with said bottom wall opposing said floor.

6. A cabinet according to claim **5** wherein said top wall attaching means includes a first mounting plate disposed on at least one of said side walls and resiliently urged against said one side wall;
a second mounting plate carried on said top wall and sized to be urged between said one side wall and said first mounting plates;
latch means for latching said second mounting plate between said first mounting plate and said one side wall, said latching means including apertures formed in one of said first and second mounting plates and tabs disposed on another of said first and second mounting plates to be received within said apertures.

7. A cabinet comprising:

(a) a plurality of walls including a first set of opposing side walls joined by opposing top and bottom walls;

(b) bottom wall attaching means for attaching said bottom wall to said side walls with means for defining an upwardly opening channel on a lower edge of said side walls and sized to receive a downwardly projecting lower edge of said bottom wall, said channel and said lower edge sized and positioned for said side wall to extend to close proximity to a floor when said bottom wall is attached to said side walls and said cabinet is placed on said floor with said bottom wall opposing said floor;

(c) top wall attaching means for attaching said top wall to said side walls and including:

(1) a first mounting plate disposed upon at least one of said side walls and resiliently urged against said one side wall;

(2) a second mounting plate carried on said top wall and sized to be urged between said one side wall and said first mounting plate;

(3) latch means for latching said second mounting plate between said first mounting plate and said one side wall, said latching means including apertures formed in one of said first and second mounting plates and tabs disposed on another of said first and second mounting plates to be received within said apertures;

(d) a second set of opposing side walls including at least one of said second set having a free end sized to be inserted together with said second mounting plate between said one side wall of said first set and said first mounting plates.

* * * * *